

U.S. BUSINESS OPPORTUNITY

COLOMBIA AERONAUTICAL METEOROLOGY SYSTEM PROJECT

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For more information on this project, possible financing options and export opportunities in Colombia, contact:

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Overview

The evaluation to modernize the Colombia Aeronautic Meteorological system was funded by a Technical Assistance grant awarded by the United States Trade and Development Agency (USTDA) at the request of the Unidad Administrativa Especial de Aeronautica Civil (UAEC, also known as AeroCivil).

Project Description

The provision of meteorological information services to the aviation sector is a critical part of a modern integrated air traffic management system. Current and forecast weather information improves aviation safety and provides economic benefits to air traffic system users. Colombia's geographic location with respect to flight routes and its varied topography and climatological conditions require an improved system to acquire and disseminate aviation meteorological data on a near real-time basis. Seventy percent of flights between South America and North America cities utilize Colombian airspace.

Colombia uses several resources for aeronautical meteorological services. Local weather observations of varying quality and degree are taken at each of Colombia's 48 controlled airports.

The Technical Assistance study suggested that the critical issue is one of not just meeting minimum international standards but providing a level of service for the entire Colombian aviation community where improved weather information will have a direct impact on flight safety and efficiency. This encompasses a need for improved observational systems and increased numbers of trained meteorologists and maintenance providers as part of a cost-beneficial solution. Improvements to aviation meteorological services will be of benefit to airlines, pilots, dispatchers, and those engaged in air traffic management. It is also desirable to extend the notion of international standards to embrace domestic flights and aircraft safety.

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Status and Implementation

The Technical Assistance study suggested a plan that would reflect a transition to the increased use of automation in the current meteorological system, from observations to data distribution, analysis, product generation and dissemination to end users.

Introduction of automated, self service weather briefing stations could, for example, open these services to every airport in Colombia. This transition is fully consistent with future enhancements expected from the meteorological components of the planned communications, navigation, surveillance/air traffic management improvements that provide more data, fully networked communications links, data access and enhanced visualization and display of weather products.

The major goals and objectives of a modernization plan for the aviation and meteorology system include:

- Collection and dissemination of hourly weather reports from all controlled airports using upgraded automated weather stations that provide observations around the clock
- Use of networking technologies to eliminate multiple manual data entries and improve dissemination
- Issuance of aviation weather forecasts for all controlled airports
- Issuance of AIREPs and SIGMETs to enhance situational awareness and enhance flight safety
- Improve the availability and use of upper air observations from radiosondes
- Expand and improve the use of remote sensing technologies for situational awareness
- Transition existing staff responsibilities from routine observational tasks to the production and delivery of higher level meteorological services
- Develop a Colombian mesoscale numerical weather forecasting model for use in preparing Terminal Area Forecasts

To meet these goals listed above, it was determined that any solution would share the following similar characteristics:

- Establishment of a Colombian Aeronautical Meteorological Center
- The purchase of high-quality meteorological systems and budgeting adequate funds for their maintenance
- Acquisition of automated surface meteorological systems
- Implementation of a continuous training program

The Study recommends implementation over a 10 year time frame (2004-2014) with periodic program reviews to update and adjust priorities to reflect funding realities, technological advances, and changing operational requirements. It is anticipated that one further tender in relation to the meteorological network will be issued in 2013.

Project Cost and Financing

The cost of making these improvements has been estimated to range from between \$12 million and \$35 million dollars. Three funding alternatives have been identified and evaluated:

- Use of an up-front loan from a commercial bank or multilateral lending agency
- Borrowing funds from a commercial bank on an as-needed basis
- Self-funding from net operating income

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U.S. Competitiveness and Export Potential

The following is a list of U.S. goods and services that can be utilized in this project:

- Automated Weather Observing System (AWOS)
- AWOS-2
- Ceilometers
- Anemometers
- Aircraft data exchange and digital data linking
- Doppler Lidar
- Barometers
- Radio theodolites
- Software
- Satellite systems
- Radar processing systems and displays
- Upper-air sounding systems
- DigiCora radiosonde systems
- Tethersondes
- Lightning detectors
- Low-level wind windshear alert systems
- Anemometers
- Boundary layer wind profilers

U.S. exports have already been realized in relation to this activity, for the acquisition, installation, and operation of receptor equipment and CNS/ATM stations, as well as the repair of WAFS and GVAR systems for the maintenance of the meteorological network.